

REMARKS

The application has been amended to place the application in condition for allowance at the time of the next Official Action.

Claims 71, 75-80, 121-125 and 129-131 were previously pending in the application. Claims 76 and 131 are canceled, leaving claims 71, 75, 77-80, 121-125, 129 and 130 for consideration.

Applicants would like to thank the Examiner for contacting applicants' representative on December 15, 2004 and suggesting changes that would place the application in condition for allowance. In reliance thereon, the claims are amended substantially as suggested by the Examiner.

Claims 71 and 129 are amended to address the claim objections noted in the Official Action. Claim 71 is amended to recite the heat treatment as supported, for example, on page 63, lines 17-23 of the application as filed.

Claim 71 also recites a measurement technique where the microscopic fluctuation is as measured based on temperature dependence of a photoluminescence lifetime. It will be appreciated that claim 71 does not require performance or the recited measurement to infringe, but rather that recitation of the measurement condition lends definiteness to the previously-recited parameters.

Claim 129 is amended to clarify that the microscopic fluctuations are "not more than 20 meV" consistent with the application as filed on page 55, lines 14-20 and page 58, lines 1-6 of the application as filed.

A Terminal Disclaimer is filed herewith to obviate the rejection of claims 71, 75-80, 121-125 and 129-131 under the judicially created doctrine of obviousness-type double patenting over claims 1-64 of U.S. Patent No. 6,642,546.

Claims 71, 76, 77, 79, 121, 124, 125, 130 and 131 are rejected as anticipated by or, in the alternative, as obvious over DOMEN et al. 6,555,403. This rejection is respectfully traversed.

As noted above, amended claim 71 now recites that the microscopic fluctuation values must agree with a measurement based on temperature dependence of a photoluminescence lifetime (but not that such measurement is necessarily performed); and that the microscopic fluctuation is controlled by heat treatment of a semiconductor device at a temperature between 850°C and 1200°C.

As noted in the amendments of December 8, 2003 and October 13, 2004, DOMEN et al. do not disclose or teach the concept of "microscopic fluctuation". DOMEN et al. also do not teach or suggest measuring a photoluminescence lifetime. Therefore, DOMEN et al. could not disclose or suggest that the

microscopic fluctuation is measured based on temperature dependence of a photoluminescence lifetime.

Rather, DOMEN et al. use a micro-photo-luminescent measurement to measure macroscopic fluctuations. Such measurement technique is inapplicable to measure microscopic fluctuations.

Since it does not appear that the fluctuation addressed by DOMEN et al. is the "microscopic fluctuation", DOMEN et al. could not teach or suggest that the microscopic fluctuation is controlled by heat treatment of a semiconductor device at a temperature between 850°C and 1200°C. Accordingly, both the anticipation rejection and the obviousness rejection are believed to be improper. Reconsideration and withdrawal of the rejection are respectfully requested.

Claim 129 is rejected as unpatentable over DOMEN et al. This rejection is respectfully traversed.

Claim 129 depends from claim 71 and further defines the invention. As set forth above, DOMEN et al. do not disclose or suggest what is recited in claim 71. Since claim 129 depends from claim 71, DOMEN et al. would not render obvious claim 129.

Claims 75, 78, 80, 122 and 123 are rejected as unpatentable over DOMEN et al. in view of RAZEGHI 6,459,096 and/or applicants' disclosed prior art. This rejection is respectfully traversed.

RAZEGHI is only offered for the teaching of a cavity length above 1 mm and applicants' disclosed prior art is only offered for the teaching of a GaN substrate. Neither RAZEGHI nor the disclosed prior art teaches or suggests what is recited in claim 71. As set forth above, DOMEN et al. do not disclose or suggest what is recited in claim 71. Since claims 75, 78, 80, 122 and 123 depend from claim 71 and further define the invention, the proposed combination of references would not render obvious claims 75, 78, 80, 122 and 123.

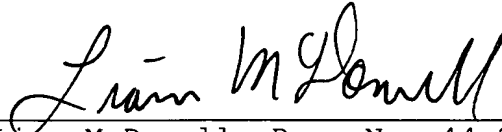
In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

Please charge the terminal disclaimer fee of \$130 to Deposit Account No. 25-0120.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



Liam McDowell, Reg. No. 44,231
745 South 23rd Street
Arlington, VA 22202
Telephone (703) 521-2297
Telefax (703) 685-0573
(703) 979-4709

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APPENDIX:

The Appendix includes the following item:

- Terminal Disclaimer